

## **APPENDIX 8—STANDARD OPERATING PROCEDURES FOR RANGE IMPROVEMENTS AND VEGETATION MANIPULATIONS**

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These operating procedures provide standard guidance for all range improvements and vegetation manipulations.

Consultation with the interested public that would be affected and an approved environmental analysis would be required for all range improvements before any project would be constructed.

Roads or trails to new construction or project sites would be constructed only if access does not exist.

Proposed range improvements that would result in surface disturbance would be inventoried for archeological features. All archeological sites identified would be avoided or mitigated. If undiscovered cultural remains are encountered during construction, the operator would temporarily discontinue activities until the Bureau of Land Management (BLM) evaluates the discovery and determines the appropriate action.

Proposed range improvements that would result in surface disturbance would be inventoried for special status plant or animal species. All BLM sensitive species locations would be avoided or mitigated.

No action would be taken by BLM that could jeopardize the continued existence of any federally listed threatened or endangered plant or animal species.

BLM would also comply with any state laws applying to animal or plant species identified by the state as being threatened or endangered (in addition to the federally listed species).

Wildlife escape devices would be installed and maintained in all water troughs.

Fences in pronghorn antelope winter ranges, deer crucial winter ranges, and known migration routes would be constructed to minimal standards (3-strand wire fence with bottom wire smooth and top 2 barbed; total fence height of 38 inches), monitored annually, and modified if necessary to facilitate reasonable movement by wildlife.

All areas where vegetation manipulation occurs would be totally rested from livestock grazing for a minimum of two growing season, or longer if necessary, to allow for the recovery and reestablishment of key forage species.

Chemical treatment would consist of applying approved chemicals to meet plan objectives. Before chemicals are applied, the BLM would comply with Department of Interior regulations. All chemical applications would be preceded by an approved pesticide use proposal and an environmental assessment. All applications would be carried out in compliance with the pesticide laws for Wyoming.

All land treatment projects on crucial wildlife ranges will be limited in size, where necessary, by the cover and/or forage requirements of wildlife. Proper mitigation measures would be incorporated.

All burning projects will have a burn plan, environmental assessment, and a burn permit from the State of Wyoming's Department of Environmental Quality prior to initiation.

The impacts on wildlife winter range areas and on wild horse distribution would be considered in planning all new water facilities.

On identified crucial deer winter ranges where vegetative manipulation is planned or other vegetative disturbance has occurred and reclamation is necessary, include a variety of high quality shrub seedlings, such as winterfat, shadscale, four-wing saltbush, and, in certain instances, mountain mahogany and antelope bitterbrush to complement the usual grass mixture.

Exclusion of wild horses and livestock and possible reseeding operations may be required in severely unstable watersheds.

All vegetation treatments will be designed to be irregular in shape for edge effect, cover, and visual esthetics.

## **DESIGN OF RANGE IMPROVEMENTS**

All range improvements will be designed and constructed in a manner to minimize environmental impacts while maximizing function and cost effectiveness. Prior to the installation of any range improvements, an environmental assessment (EA) will be prepared analyzing the alternatives for the project.

### **Reservoirs**

Reservoirs are constructed by heavy earth-moving equipment that is used to build dikes across drainages. The impoundments created are designed to catch temporary runoff or permanent streamflow to provide a more reliable source of water for livestock and wildlife. Design requirements are determined mainly by the nature and amount of source water. Where permanent flow exists, or in critical wildlife areas, reservoirs will be fenced and off-site watering facilities (troughs) will be installed. This will provide riparian habitat, reduce silt load entering the reservoir, and increase waterfowl survival.

Water will be provided for wildlife in appropriate habitat areas (spring/summer/fall habitat areas). Whenever possible, water will be provided in allotments (including rested pastures) during seasonal periods of need for wildlife.

### **Wells**

Wells are usually drilled in areas where other water sources are unavailable to provide a reliable water source for livestock and wildlife. Drinking troughs will be installed near the well and will be modified to serve young and mature animals as well as small game and birds. Well sites will be selected based on geologic well site investigations.

### **Springs**

Spring sources are usually developed with a backhoe or other implement designed to expose the aquifer. Source points are gathered into a central point or head box through a perforated pipe and diverted into a pipeline or drinking trough. The spring source will be fenced for protection and to provide riparian habitat. A wildlife drinking trough may be located within the enclosure. The

livestock trough will be located outside the enclosure and will also be modified for use by wildlife. All spring developments will be managed as a closed system.

## **Water Pipelines**

Pipelines consist of plastic, usually polyethylene, pipe that is buried by mechanical pipe-laying implements to a depth necessary to maximize the life and efficiency of the pipe material. Pipelines originate at spring sources or wells and are used to distribute water to otherwise nonserved areas. Drinking troughs are situated along the pipeline, usually no more than 1 mile apart, to distribute use throughout the area.

## **Fences**

Fences are constructed to provide management boundaries. They provide pastures or outside boundaries for grazing allotments. Because of the potential for impact to wildlife movement, fence design is highly variable. Wire is smooth, barbed, mesh, or combined, dependent on the wildlife species involved. Steel line posts are spaced a minimum of 16.5 feet apart. Wooden braces are usually spaced 1/4 mile apart. Fences may be modified in heavy snow or animal migration areas by using wood poles.

## **Cattleguards**

Cattleguards will be installed where fences cross heavily traveled roads or in situations where opened gates would severely compromise management. Cattleguard grids vary in weight and size requirements, but usually require a backhoe to install.

## **NOXIOUS WEED GUIDELINES**

Chemical treatment by spray application within 100 feet of perennial streams would be prohibited. If riparian vegetation exceeds 100 feet, this buffer would be expanded to make certain this vegetation is not destroyed. Noxious weeds may be treated in accordance with the Rock Springs District Noxious Weed EA (WY-049-EA82-64) and Northwest Area Noxious Weed Control Program Environmental Impact Statement (EIS).

Aerial application of chemicals would not be allowed within 1/4 mile of special status plant locations.

Hand application will be prohibited within 500 feet of special status plant locations.

The County Weed and Pest Supervisors will consult with the BLM Authorized Officer prior to initiation of any site-specific treatment projects.

The County Weed and Pest Supervisor with the BLM Rock Springs Field Office (RSFO) will develop a water monitoring plan for any riparian treatment area prior to chemical applications. For management purposes, riparian habitat is the onsite vegetation found immediately adjacent and subject to the influences of surface and subsurface waters from streams, rivers, or standing bodies of water.

## **Monitoring**

All chemical treatment sites will be reevaluated by the County Weed and Pest Supervisors and the BLM Authorized Officer 1 and 2 years, respectively, after treatment to ascertain the effectiveness of the treatment program. If re-treatment is necessary, County Weed and Pest Supervisors in cooperation with the BLM RSFO will develop a re-treatment program.

## **Aerial Application**

All aerial application, particularly near live water (ponds or lakes), would require the direct consultation and approval of an Authorized Officer of the RSFO prior to the action. An unsprayed buffer zone of 100 feet will be maintained near live or still water. Spray areas will be irregular in shape.

## **Vehicular-Mounted Boom Sprayers and Hand Spray Gun**

Vehicular-mounted boom sprayers and hand spray guns would mostly be used in nonriparian zones, accessible by vehicle. Near live or still water areas, the spray boom would only be used where feasible. With both methods, sprays would be applied at a height of 1.5 to 2 feet when wind velocity is below 7 mph, except in riparian areas where treatment would only be conducted when wind velocity is below 4 mph.

## **Wipe Application Method for Liquid Formulations**

Wipe application would be used near live water and other aquatic sites, particularly environmentally sensitive areas, and where weeds overhang waterways. The herbicide solution would be wiped on the individual plants to be controlled. All herbicide application near water areas described in the Designated Noxious Weed Control EA would require consultation and approval by the BLM Authorized Officer prior to initiation of treatment. A buffer zone or distance designated by the BLM Authorized Officer after consultation with the appropriate County Weed and Pest Supervisor would be maintained near these waters.

Chemical spraying in riparian areas will not be allowed without prior approval of the authorized officer. All spraying will follow guidelines in appropriate BLM manuals.

As an ongoing part of the program, BLM will consider the reinvasion of noxious weeds in the design and implementation of grazing systems.

Chemical treatment and applications will be used only where national guidelines and demonstrated protection can be exercised to prevent unwanted destruction of desirable fauna or flora and to prevent transportation of these chemicals to other areas by water or air movement. Edge effect will be maximized by following natural contours and terrain features.

Grazing of treated areas would be deferred for at least two growing seasons.

Allow no surface-disturbing construction of range improvements if high seasonal soil moisture would result in excessive rutting of roads, etc. The period from March 15 to May 1 is typically unsuitable for surface-disturbing activity.

## BRUSH CONTROL

Brush control refers to the removal of a shrub or tree overstory to release the grass and forb understory from the effects of competition for soil nutrients and water. Brush control also helps with establishing new shrub seedlings and resprouting of existing shrubs. The techniques involved in brush control generally fall into one of three categories: burning, chemical, or mechanical.

Burning involves the use of fire under prescribed conditions to change the character of the vegetative community. This technique takes advantage of the relative fire tolerance between plant species. Prescribed burning is most useful in removing a dominant fire sensitive overstory species, such as big sagebrush, thereby opening up the community to the natural response of fire tolerant grasses, forbs, and shrubs. Prescribed fire can also be useful in preparing a seedbed for artificial reseeding. The main disadvantage to prescribed burning is its harsh initial impact on the site. Initially, ground cover is greatly reduced, erosion potential is increased, wildlife habitat is reduced, and forage production is decreased. Reestablishment of vegetation on the site can be quite slow, but usually results in increased productivity, palatability, and species diversity while erosion potential is decreased over pretreatment levels. The cost of prescribed burning is low compared to other techniques.

Chemical treatments involve the use of ground or aerially applied herbicides on target species to reduce their competitive effect on more desirable species. Many classes of herbicides exist, and they all vary in action, selectivity, and persistence. However, relatively few compounds are approved for use in brush removal on public lands. These compounds are usually selective for broadleaf vegetation, leaving only grasses, tolerant forbs, and shrub species after treatment. For example, if the target species is sagebrush, few species other than grasses will exist immediately following application. However, by the next growing season the seed source for other species will begin to express itself as a result of reduced overstory competition. Generally by the end of the first complete growing season, increased understory productivity and species diversity are evident. Chemical treatments have less total impact on the site than burning or mechanical treatments but are usually more expensive than burning. In addition, the seedbed resulting from a chemical treatment is usually not as suitable for reseeding because of the amount of standing litter.

Mechanical treatments involve the use of agricultural equipment to simply remove the overstory or to consume the entire community and leave a suitable seedbed. Techniques and implements are highly variable, but all share the disadvantage of high cost.

All of the above brush control techniques can be used to prepare a seedbed suitable for artificial reseeding. Where needed, reseeding is a viable technique to establish a more desirable plant community. However, seed and application costs can be high and are sometimes difficult to prove cost effective. Wherever possible, techniques used and sites chosen on the resource area will be those that lend themselves to natural regeneration.

Vegetation manipulation (controlled burning, mechanical treatment, artificial seeding, etc.) will generally be designed in irregular patterns to create more “edges” with islands of vegetation left intact for cover, with the exception of drainages where active channel incision is occurring or in areas where saline or sodic soils are present. Manipulation proposals are handled on a case-by-case basis, followed by animal control measures to ensure re-establishment of vegetation.

## **PRESCRIBED BURN TREATMENT GUIDELINES**

Prescribed fire will generally be the preferred method of vegetation manipulation to convert decadent stands of brushland to grasslands and to stimulate sprouting of old, decadent aspen stands and/or shrub species. Prescribed burns are preferred in areas having greater than 35 percent sagebrush composition, 20 percent desirable grass composition, and greater than 10 inches of precipitation. Other vegetation manipulation methods will be considered on a case-by-case basis depending on objectives and cost benefits.

Prescribed burns would be conducted in crucial antelope and mule deer winter ranges or sage grouse nesting areas only if habitat values would improve for these species. A site-specific analysis would be conducted prior to any treatments. Areas with a significant amount of antelope bitterbrush (*Purshia tridentata*) will be examined and evaluated before prescribed burns are conducted. Burns will be conducted in conditions that support the objective. Edge effect will be maximized by burning in a mosaic pattern whenever possible. Unplanned fires that occur in areas with an approved fire prescription will be allowed to burn as long as they remain within the prescriptions and meet land use objectives. Individual, decadent aspen stands may be burned to promote sprouting and encourage regeneration. Each planned burn will be evaluated and examined in relation to multiple use objectives.

Each alternative has identified the number of acres suitable for prescribed fire to increase forage production. The acreage figures were derived from computer-generated data (Geographic Information System and satellite imagery) which overlayed precipitation zones, crucial wildlife ranges, and areas with greater than 35 percent brush canopy. Development of Allotment Management Plans (AMP) and other activity plans will further refine the acreage values according to livestock grazing, wildlife, and other resource objectives. Some allotments have very little acreages available for prescribed burns and are not likely to be treated because of the high cost of burning such small areas. Other allotments containing large acreages may not receive the total projected burn acreage because of resource considerations (e.g., Greater Sage-Grouse nesting areas, erodible soils, or other factors). Acreages of prescribed burns may increase or decrease on certain allotments depending on rangeland management needs as addressed in AMPs and other activity plans.

## **CHEMICAL TREATMENT GUIDELINES**

Chemical treatment and applications will be used only where control can be exercised to prevent unwanted destruction of desirable flora or fauna and to prevent transportation of chemicals to other areas by water or air movement. Specific methods of application would be used for the control of noxious weeds and the reduction of sagebrush canopies that have increased to undesirable levels. Sagebrush control areas will be limited to a maximum size of 160 acres. Edge effect will be maximized by following natural contours and terrain features.

Wipe application methods may be used along the streams that are Colorado River trout habitat and in the special habitat improvement program areas in the planning area provided no adverse impacts occur to these resources.

Method of control of designated noxious weeds and other invasive species near special status plant sites will be determined by the BLM.

Biological treatment (insects) will be considered to weaken and limit reproduction of noxious weeds in critical riparian areas or areas with sensitive plants and animals where application of



